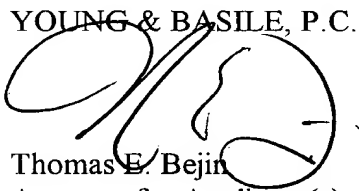-4-

REMARKS

After entry of this amendment, claims 1-21 are pending in the application. The specification has been amended in response to the notice to file missing parts mailed July 9, 2001. Specifically, all references to Figure 6A have been deleted from the application.

It is submitted that this Amendment has antecedent basis in the application as originally filed, including the specification, claims and drawings, and that this Amendment does not add any new subject matter to the application. Consideration of the application as amended is requested. It is submitted that this Amendment places the application in suitable condition for allowance; notice of which is requested.

If the Examiner feels that prosecution of the present application can be expedited by way of an Examiner's amendment, the Examiner is invited to contact the Applicant's attorney at the telephone number listed below.

Respectfully submitted,

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Dated: September 7, 2001
TEB/RCM/p

VERSION OF AMENDMENTS WITH MARKINGS
TO SHOW CHANGES MADE

In the specification:

Replace paragraph 12 on page 4 with:

[0012]   The description herein makes reference to the accompanying drawings wherein like reference numerals refer to like parts throughout the several views, and wherein:

FIGURE 1 is a schematic representation of the vision system of the present invention.

FIGURE 2 illustrates the present invention using a first light source.

FIGURE 2A is an image captured using the first light source.

FIGURE 3 illustrates the present invention using a second light source.

FIGURE 3A is an image captured using the second light source.

FIGURE 4 is a third image created by taking the absolute value between FIGURES 2A and 3A.

FIGURE 5 is a fourth image created by taking the minimum between FIGURES 2A and 3A.

FIGURE 6 is a flow chart illustrating the process of the present invention.

[FIGURE 6A is a continuation of FIGURE 2.]

Replace paragraph 18 on page 6 with:

[0018]   With reference to FIGURES 2 and 3, as well at the flow chart illustrated at [FIGURES 6 and 6A] FIGURE 6 vision system 10 captures two distinct images of substrate 22, at 40 and 42. Each image is captured by camera 12. As shown in FIGURES 2 and 2A the first image, or image 1 is captured using illumination from light source 16 and the second image, or image 2 is captured using illumination from light source 18. As shown in FIGURES 1, and 2 when image 1 is captured with light source 16, 3-D feature 20 will produce a glint 24 on the side of feature 20 distal from light source 16 and a feature 20 will produce shadow 26 on the

side of defect **20** proximate to light **16**. As captured by camera **12**, and illustrated by FIGURE 2A, glint **24** will result in a locally higher gray scale values and shadow **26** will result in locally lower gray scale values. In the typically case, glint **24** will result in enough light to result in a gray scale value of 255. Image 1, as captured by camera **12** includes a plurality of pixels where the pixels have an address of a value. The address is characteristic of a location on the substrate.

Replace paragraph 21 on page 7 with:

[0021]   With reference to [FIGURES 6 and 6A] <u>FIGURE 6</u> there is shown a flow chart describing, in its majority, the operation of image processor **14.** As shown image 1 and image 2 are captured at **40** and **42**. As shown at **44** the pixel values from image 1 are subtracted from the pixel values image 2 on a pixel address by pixel location basis. Thus, for 3-D data, glints are subtracted from shadows and shadows are subtracted from glints, each resulting in a comparatively high or bright value. For 2-D data the pixel values for any given pixel location in either of image 1 or image 2 will be the same and if not close to the same. Thus, subtracting image 1 from image 2 for 2-D data will result in values of zero, or not much greater. Image 3 is created as the absolute value between the difference between image 1 and image 2. FIGURE 4 illustrates the absolute value between the difference between image 1 and image 2 where the background is black and both glints are illustrated.